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Glacier Lily

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COVER ARTIST: Glynnis Broadbent

COVER STORY: GLACIER LILY

by Dorothy Broadbent
R.R. #3, Ponoka, Alberta T0C 2H0

The Glacier Lily (*Erythronium grandiflorum*) is known by many descriptive names such as Dogtooth Violet, Fawnlily, Snow Lily and Adders Tongue, and is one of our showiest flowers. Almost everyone who is familiar with this mountain plant associates it with snow because it is usually found growing beside the rotting remains of winter's worn-out blanket. Groups of Glacier Lilies seem to follow the melting snows up the mountain sides. They appears as soon as the warm winds of spring have bared the earth and stirred the evergreens in the fragrant valleys. Each colony comes to life as winter reluctantly retreats higher and higher until the last remnants of the snows finally give way to the first blooms of spring in July or even August.

A springtime sighting of a patch of these hardy perenniels is ample reward for the stiff climb that may be necessary to reach their secluded site. The masses of bright yellow blooms with their cheery nodding heads seem to be crowding out winter, and they are a sharp contrast to the drab dinginess of the receeding snow. At this time of year, as winter is just beginning, and we face the prospect of many months of snow and cold, it is consoling to know that the melting snow of winter is the catalyst that brings us the fragrant flowers of spring.

Alberta is blessed with many varieties of lilies. Some, like the several species of onion, the Mariposa Lily and the Blue Camas, are edible. Others, like the False Hellibore and White Camas, are extremely poisonous. All the members of this colourful family have delicate and beautiful blossoms, and even their fruit is attractive. The Glacier Lily is a true lily with parallel veined leaves and six-segmented flowers. Many rodents and both species of bear feed on its bulbs. The indians used to use the whole plant for food; the leaves were eaten raw and the bulbs and seed pods were boiled. How they must have relished a meal gathered in the freezing meltwater of a mountain snowfield with the raw wind stinging their faces.

Our orderly lives are drab by comparison, but those who enjoy the mountains are fortunate; they can still experience the freedom and exhilaration of high places. They can appreciate the tenacity of the fragile mountain flowers that always manage to outwait winter. The tourists speeding by in their comfortable cars are blissfully oblivious to the treasures to be found in abundance in the out-of-the-way places.

SEARCHING BEHAVIOUR IN MAGPIES

by Jim Duncan
c/o McCourt Management Ltd.
4244 - 91 A Street, Edmonton, Alberta

INTRODUCTION

Avian predators must spend at least part of their feeding time looking for prey. The ability of birds (and other animals) to efficiently search for and find hidden prey items has been a subject of investigation for many scientists. Studies by Zach and Falls (1976a) indicated that Ovenbirds (*Seirurus aurocapillus*) could form expectations of where to find food. In these warblers, searching quickly became non-random as the birds learned to concentrate their efforts in patches of highest food density (Zach and Falls 1976a,b). This learning was not forgotten; a day later the Ovenbirds would still search in areas of former high food density, even without prey items present.

In early 1981, as a project in behavioural zoology at the University of Alberta, I tested whether or not some form of similar learning behaviour could be exhibited by a local avian resident, the Black-billed Magpie (*Pica pica*).

My experiments were designed to test the following three hypotheses concerning behaviour of foraging magpies:

1. Magpies should become more efficient at finding a reward in similar places as experience with the experimental situation increases.

2. If no food is found in the expected place the magpies should continue to search there, but do so less frequently over successive trials.

3. The expectation of where to find food should be flexible, ie. change to a new source if a new one is reinforced and the old source is not.

METHODS

Nine magpies were captured with a funnel trap in Edmonton and kept in an indoor laboratory for the duration of the experiments. Each of the birds was taught, through a gradual process of reward, to flip over small petri dishes under which small pieces of meat were hidden. All dishes were spray-painted one of five different colours. The birds became very adept at flipping the dishes (several learning in less than one half-hour of instruction) and finding the reward beneath. Experiments were run in a plexiglass arena (2 m x 1 m x 1/2 m) containing three rows of five petri dishes (five colours per row) (Figure 1). All birds were familiar with the arena before experimentation began. Observations were recorded from behind one-way glass and timed with a

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stop watch.

In order to test the first hypothesis a reward was hidden under one colour of dish giving a total of three rewards in the arena at one time. The order of the dishes was randomized for each trial. Each bird underwent five trials, in which it was released in the arena and the following key observations made.

- the total time taken to find all three rewards;
- the number of dishes flipped before all rewards were found;
- the sequential order of dishes visited; and
- the time taken to flip each dish (only if greater than three seconds).

Two assumptions had to be made when doing all experiments. One, magpies are able to distinguish colours and two, they do not rely heavily on their sense of smell when searching.

The second hypothesis was tested using the same methods, as for hypothesis 1, except only three trials were run and no reward was given. Thus I could determine if searching would continue in expected places, for a time at least.

Experiments to test the third hypothesis were run by placing a piece of meat under a colour of petri dish not previously rewarded for that bird. Again, five trials per bird were run and the above key observations recorded. When testing hypotheses 1 and 3 any decrease in time taken or number of dishes flipped before all rewards were found should indicate that the magpies were learning where to look for the rewards. Of course time taken to flip any one dish must remain relatively constant throughout the experiments. Results were analyzed using non-parametric statistics (Siegal 1956).

RESULTS

Analysis of results from the first set of experiments indicated that the magpies did indeed learn where to find the rewards. The time taken to find the three rewards decreased significantly ($p < 0.05$) over five trials (Figure 2). This could not be attributed to more adept dish flipping as in nearly all cases less than three seconds was required to flip each dish. This also held true when testing the other two hypotheses. The number of dishes flipped before all three rewards were found also decreased significantly over five trials ($p < 0.05$) which again indicates the magpies learned where to expect a reward.

Results of the trials with no rewards did not support hypothesis 2. The time taken to flip the expected dishes (ie. those rewarded previously) did not decrease or increase significantly. However, the number of dishes flipped over per trial decreased ($p<0.065$) rather than increasing as expected. The accuracy of this statistic may be questioned as there was only a sample size of four in trial three because two birds did not flip all the expected dishes and three other birds were given only a trial with no reward. (A third trial was not run with these birds because it was feared dish-flipping behaviour would cease without any reinforcement). Further consideration of these results is found in the discussion.

Figure 1. Photograph of magpie in (transparent) experimental arena; bird has just successfully flipped over a petri dish and obtained reward.

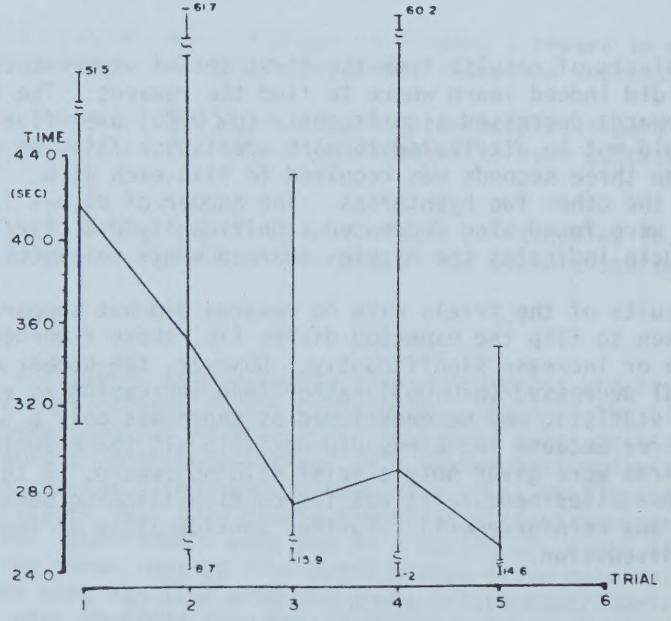

Figure 2. Trend in the time to find the rewards (first color) (vertical bars are standard deviations) $z=-2.92$ $p<.05$ $(z=1.96)$ Kruskal-Wallis test for trend

The experiments testing hypothesis 3 provided results that supported the hypothesis. The time spent searching for rewards decreased significantly ($p < 0.05$) over the five trials (Figure 3). However, when considering the number of dishes flipped there is not a significant change ($p < 0.15$) over the five trials (Figure 4). During these trials it was noted that many of the magpies still flipped the colour of dish they were initially rewarded with, often before any other dish. The number of dishes flipped did not change significantly even though time taken to find the rewards did. Further consideration of these results is given in the discussion.

DISCUSSION

Throughout these experiments I was impressed with the adaptability and learning capabilities of the magpies. The birds adjusted well to captivity and quickly learned to flip the petri dishes. Their ability to remember the location of food rewards is well demonstrated by the significant results from the first set of experiments. It should be noted, however, that the variability in all results was high, as shown by the large standard deviations.

The failure of the results to support hypothesis 2 can possibly be explained in terms of "operant conditioning". As outlined by Kimbal (1961) a conditioned response (such as flipping dishes) if not accompanied by the usual reward results in a gradual decline in the response, which is called extinction. The birds may have developed an expectation of no reward anywhere in the arena, resulting in extinction of the dish-flipping behaviour. During three trials of experiments with no reward three different birds did not flip all the expected dishes (ie. the previously rewarded ones) and the dish-flipping behaviour seemed to be disappearing. Two of the birds continued to ignore the dishes while the third set of experiments were being run and never did learn where to expect the new reward. Data for these trials was not included in the analysis of hypotheses 2 and 3.

The remaining seven birds, however, did learn the new location of the rewards and by the fifth trial were finding all three rewards as quickly as they did during the first set of experiments. The number of dishes flipped did not decrease significantly which was likely a result of the magpies continuing to flip the colour of dish with which they were first rewarded. As noted above, it was impossible to measure a decrease in time taken to flip any one dish. Therefore any decrease in time spent finding the rewards was the results of less time going from dish to dish.

The ability of these birds to learn the locations of prey items, as demonstrated by these experiments, can possibly be projected into a "wild" situation. For instance, in Edmonton, back-alley garbage cans can be a source of food for a local magpie. However, when this source is depleted (or the garbage truck comes) the birds have to look in other places for food, such as unattended dog dishes or freshly-dug gardens. If one or more of these new sources are rewarded the magpies may develop an expectation of finding food with each visit and consequently ignore the garbage cans, or at least visit them less frequently than before. Of course this behaviour may be subject to change many times over as food sources become available or are used up in the environment. It is no

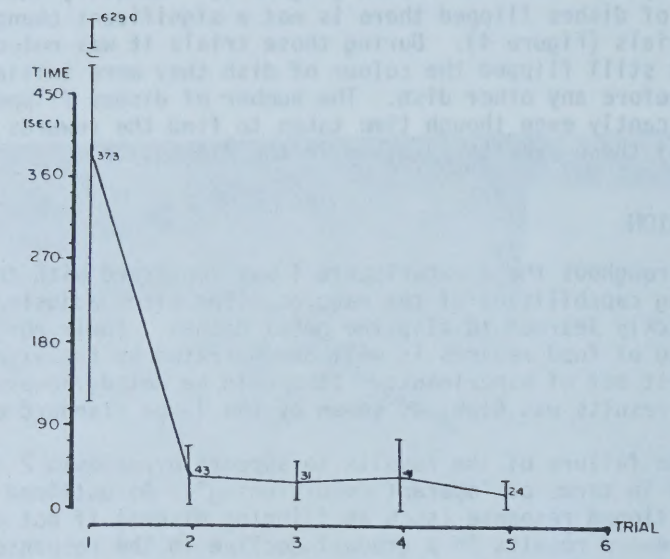

Figure 3. Trend in time to find the rewards (second color) (vertical bars are standard deviations)

$z=-2.86$ $p<.05$ $(z=1.96)$
Kruskal-Wallis test for trend

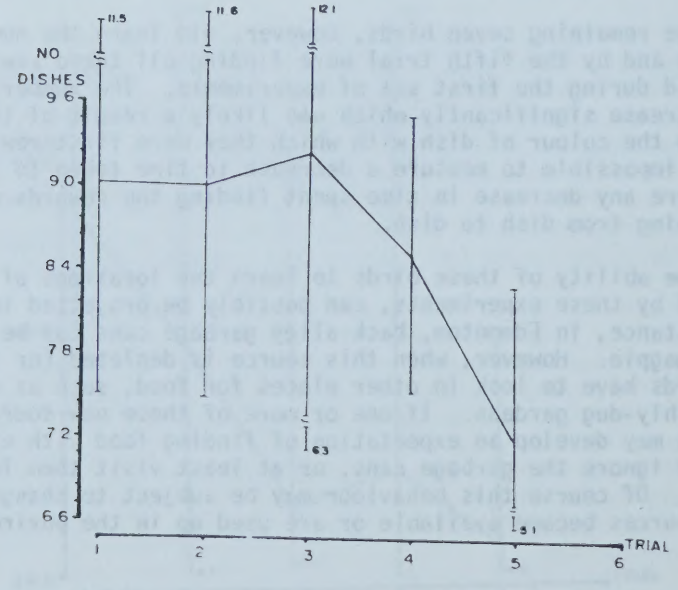

Figure 4. Trend in number of dishes flipped to find the rewards (second color) (vertical bars are standard deviations)

$z=-1.85$ $p>.05$ $(z=1.96)$
actual p value is 0.15
Kruskal-Wallis test for trend

wonder there are such high populations of magpies in Edmonton with such adaptable and intelligent foraging behaviour.

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Zach, Reto and J. Bruce Falls. 1976b. Ovenbird *(Aves: Parulidae)* hunting behaviour in a patchy environment: an experimental study. Can. J. Zool. 54: 1863-1879.

TIGER SALAMANDERS "ROOMING IN" WITH NORTHERN POCKET GOPHERS

by John Kristensen
R.R. #2, South Edmonton, Alberta T6C 4E6

Although the Tiger Salamander (*Ambystoma tigrinum*) is a relatively common amphibian in Alberta, the species is not observed as frequently as one might suspect. It probably is seen most often in wet areas adjacent to waterbodies, or in waterbodies skulking along the bottom among aquatic plants in relatively shallow waters. Tiger Salamanders are seen less frequently in truly terrestrial habitats, although they spend considerable time on land (Stebbins 1966). I was interested to find it a common resident on our acreage, located several kilometres southeast of Edmonton (the old Bretona Corner). Salamanders were observed on a total of nine occasions in 1980 and 1981, and I assume represented nine different individuals. The following is a brief account of these observations.

Three salamanders were observed above ground. One individual was found midday in June 1980 resting in a wood pile close to our house. It was an extremely hot day, and the salamander presumably was seeking protection from the sun in a shaded and cool location. My son picked it out of the wood pile and put it on the ground in the sun. It immediately slithered for cover, and did so repeatedly as my son continued to move it out into the open where it became exposed to the sun. Two salamanders were observed in our garage, one on

15 September and another on 7 October 1981. Both individuals were crawling around in water that had collected on the garage floor from our wet vehicle. In both cases, the salamanders crawled for cover as I approached to get a better view.

The other six observations were of Tiger Salamanders underground. In late July 1980 my wife uncovered an individual as she was digging for potatoes in our garden. The remaining five observations were of salamanders in Northern Pocket Gopher (*Thomomys talpoides*) burrows. On 15 April 1981 my son and I uncovered an individual while we were levelling previous year's gopher mounds. The salamander was located approximately 20 cm underground in the middle of a very large gopher mound, and was very lethargic, perhaps in hibernation. Our attempts to activate the salamander by placing it in water were unsuccessful. On 11 May 1981 an individual fell out of a gopher trap as I lifted it out of a burrow located on the slope of our driveway. The salamander immediately scurried into the gopher burrow. A salamander also was found by my wife on 13 May 1981 in a gopher burrow located under our lawn. While digging a hole on 19 August 1981 to set a gopher trap in an area dominated by tall Timothy grass, I uncovered a very lethargic salamander that appeared to have been estivating and in no hurry to escape for cover when I put it out in the open on a bare piece of ground. Late in the evening on 3 September 1981, a very lively Tiger Salamander was observed in a gopher burrow situated on an east-facing slope of our driveway. I first noticed this individual backing up in the burrow as I was digging at the burrow entrance. When I shone a flashlight into the burrow, the salamander backed up even further until only its head was visible as it peered around at me from behind a bend in the burrow. It crawled out toward the entrance when I turned the flashlight off, but backed up quickly as I turned it on again. This game of moving back and forth in the burrow continued for about five minutes.

It is not unusual for Tiger Salamanders to inhabit the burrows of mammals including those of ground squirrels, gophers and badgers (Stebbins 1966). The Tiger Salamanders observed in the burrows of Northern Pocket Gophers on our acreage likely were hibernating or estivating. Our acreage may be particularly attractive habitat to Tiger Salamanders, because it is located only about 150 m from a permanent pond about 60 acres in size.

LITERATURE CITED

Stebbins, R.C. 1966. A field guide to western reptiles and amphibians. Houghton Mifflin Company, Boston. 279 pp.

OVERHEARD. . .

"Grizzly bears are indeed *horribilis*: in 1970 they reduced the human population of Canada by .00001 per cent (two people), and were widely reported as the scourge of holidaying mankind."

From "Marked by the Wind", Littlejon & Pearce, eds., reprinted by permission of The Canadian Publishers, McClelland and Stewart Limited, Toronto

NORTH AMERICAN BLUEBIRD SOCIETY REGIONAL CONFERENCE BRANDON, MANITOBA JUNE 25-28, 1981

by Don Stiles
20 Lake Wapta Rise SE
Calgary, Alberta T2J 3M9

It is fitting that the first western regional conference of the North American Bluebird Society was held in Brandon, Manitoba, where the first western Canadian Bluebird Trail was started by John Lane in 1959. His widow, Norah Lane, spearheaded the conference with ample assistance from members of the Brandon Natural History Society in areas such as registration and field trips.

The conference consisted of registration on the evening of June 25, day field trips on June 26 and 28, and bluebird papers on June 27. The field trips gave all of the three busloads of people a chance to see a Mountain Bluebird nest, an Eastern Bluebird nest and a Tree Swallow nest, as well as the parkland habitat where these species breed.

Papers were presented by Duncan Mackintosh, Lethbridge, Art Aylesworth, Ronan, Montana, who has Mountain and Western Bluebirds, Hubert Prescott, Oregon, Western Bluebirds, Lorne Scott, Indian Head, Sask., Norah Lane, Brandon, Manitoba, Richard Rounds, Brandon, Manitoba, and myself.

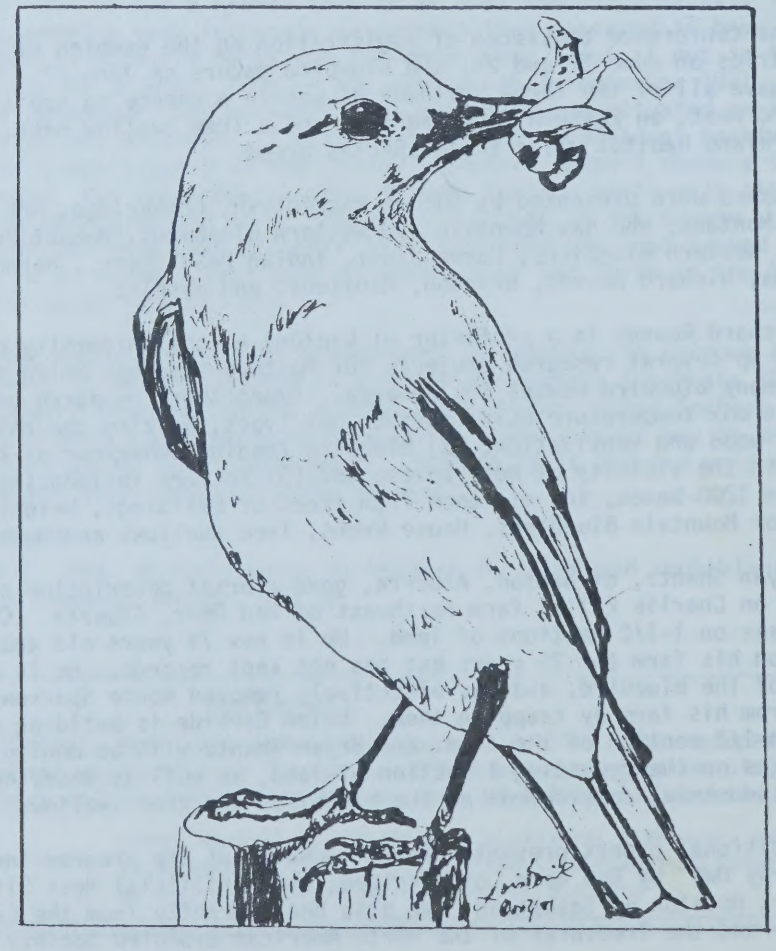
Richard Rounds is a professor of biology at the University of Brandon. He has set up several research projects for Masters students which take advantage of the many bluebird houses in the area. Among these research projects are: (1) Nest box temperature using various box types, varying the colour, thickness of wood and ventilation; (2) bluebird feeding behaviour as studied from blinds in the vicinity of nest boxes; and (3) factors influencing nest selection based on 1200 boxes, ie. distance from trees or buildings, height and habitat type, for Mountain Bluebirds, House Wrens, Tree Swallows and House Sparrows.

Bryan Shantz, of Nanton, Alberta, gave a brief description of his coming project on Charlie Ellis' farm northeast of Red Deer, Alberta. Charlie has 279 houses on 1-1/2 sections of land. He is now 79 years old and has had houses on his farm for 25 years but has not kept records. He is a faithful friend of the bluebird, and has effectively removed House Sparrows and starlings from his farm by trapping them. Union Carbide is building an ethylene plant on 1/2 section of the farm, and Bryan Shantz will be monitoring the nest boxes on the remaining 1 section of land, as well as studying the impact of the industrial development on the bluebirds and tree swallows.

Additional papers presented which rounded out the program included: "The Great Gray Owl" by Bob Nero, of Winnipeg, and "Artificial Nest Site Provision" by Stuart Houston of Saskatoon. We also heard briefly from the Executive Director and the Treasurer of the North American Bluebird Society which is

headquartered in Maryland. They publish a quarterly journal on bluebirds called Siailia. (For additional information about this contact the author.)

On Saturday evening the Brandon group sponsored a banquet. The master of ceremonies was Bob Lane of Edmonton, Jack and Norah Lane's son. Lawrence Zeleny, the founder of the North American Bluebird Society, was the featured speaker. Larry gave the history of the Bluebird Trail movement in North America, telling of many people in the U.S. and Canada who had started bluebird trails. He attributed the concept of a bluebird trail to Dr. T.E. Musselman of Illinois in 1934. Most of the examples he gave were from the period 1957-1973. In Canada this included John Lane in Brandon in 1959 and later Lorne Scott and Stuart Houston in Saskatchewan. Alberta's best-known trails were started in Edmonton in 1971 by Joy Finlay, Calgary in 1973 by Harold Pinel, and Lethbridge in 1974 by Duncan Mackintosh.



One idea which particularly interested me was a roof design by Art Aylesworth. He uses strong wire nailed to the roof and folded over so it can be bent into holes in the side of the house. This roof can be quickly removed by flipping it to the front of the house. Another interesting roof variation came from Jack Park of Edmonton. He has found a partial plexiglass roof, say 3"x3", which lets light into the box discourages House Sparrows but not other cavity-nesting species. A minor difference was noticed in house design between NABS, which uses 4"x4" floors in their boxes, and western groups who use 5"x5" floors. This discrepancy may have come about due to the slightly larger size of the Mountain Bluebird compared with the Eastern Bluebird. Yet another interesting idea is that of putting two houses close together, even on adjacent fence posts, to lessen competition between bluebirds and Tree Swallows. It was suggested that different species would nest close together but same species would not.

For further information on Bluebird house design or any other aspect of bluebird trail monitoring, write either myself or any of the following local bluebird trail coordinators: Cam Finlay, R.R. #2, Sherwood Park, AB T8A 3K2; Duncan Mackintosh, 1919-9 St. S., Lethbridge, AB T1J 1W8; or Lloyd Lohr, Box 1414, Stettler, AB T0C 2L0.

[Lois Bonik, an artist from Dunstable, Alberta, contributed the line drawing of a Mountain Bluebird to illustrate this article.]

BIRD CHECK-LIST FOR ELK ISLAND NATIONAL PARK

The Park Wardens of Elk Island National Park have devised the following Check-List of the Birds of Elk Island National Park. It is, at present, an Interim Check-List, and they have asked for input from AN readers. They ask for comments or suggestions on format or content of this Interim list. The final list will be compiled early in the New Year. In addition to a bird Check-List, Park Wardens are in the process of compiling a computerized wildlife inventory of Elk Island. They would greatly appreciate notification of any rare or unusual wildlife sightings within the Park. Location, date, time and habitat should be noted when recording sightings.

If you have any comments on the following Interim Check-List, or any other relevant data, contact Mr. F.A. Bamber, Superintendent, Elk Island National Park, Site 4, R.R. #1, Fort Saskatchewan, AB T8L 2N7 (phone 998-1577).

INTERIM ELK ISLAND NATIONAL PARK BIRD CHECKLIST

This list is for you to record birds seen while in Elk Island National Park. Over 200 species of birds have been recorded in the Park. The diverse

avifauna is a reflection of the diverse habitat types available to the birds. Abundance of various species is not noted except for those that occur only rarely.

ABUNDANCE AND STATUS CODES

*	= breeds in the Park
R	= resident: occurs year-around
M	= migrant: both spring and fall
SM	= spring migrant
WV	= winter visitor: occurs only in winter
SV	= summer visitor: occurs in summer
?	= questionable status, especially breeding
rare	= a species present but not necessarily recorded over a season
a	= accidental: unexpected appearance, with less than three sightings in the last 20 years

The nomenclature of the 1957 AOU Checklist and its supplements have been followed in this list.

SPECIES/STATUS

Common Loon/SV*
Red-necked Grebe/SV*
Horned Grebe/SV*
Eared Grebe/SV*
Western Grebe/M
Pied-billed Grebe/SV*
White Pelican/M-rare
Double-cr. Cormorant/SV*?
Great Blue Heron/SV*
Blk.-cr. Night Heron/SV*
American Bittern/SV*
Whistling Swan/M-rare
Canada Goose/SV*
White-fr. Goose/M
Snow Goose/M
Ross' Goose/M-rare
Mallard/SV*
Gadwall/SV*-rare
Pintail/SV*-rare
Amer. Green-winged Teal/SV*
Blue-winged Teal/SV*
Cinnamon Teal/SV*-rare
American Wigeon/SV*
Northern Shoveler/SV*-rare
Wood Duck/a
Redhead/SV*
Ring-necked Duck/SV*
Canvasback/SV*
Lesser Scaup/SV*
Common Goldeneye/SV*
Barrow's Goldeneye/M,SV*-rare

SPECIES/STATUS

Bufflehead/SV*
Old Squaw/M
White-winged Scoter/SV*
Surf Scoter/SV*-rare
Ruddy Duck/SV*
Hooded Merganser/M,SV,*?
Common Merganser/M
Red-breasted Merganser/M
Goshawk/R*
Sharp-shinned Hawk/SV*
Cooper's Hawk/R*-rare
Red-tailed Hawk/SV*
Broad-winged Hawk/SV*
Swainson's Hawk/M,SV-rare
Rough-legged Hawk/M
Golden Eagle/WV-rare
Bald Eagle/M,WV
Marsh Hawk/SV*
Osprey/M-rare,SV?
Prairie Falcon/M-rare
Peregrine Falcon/M-rare,SV?
Merlin/SV*
American Kestrel/SV*
Spruce Grouse/R-rare
Ruffed Grouse/R*
Sharp-tailed Grouse/R-rare
Ring-necked Pheasant/R-rare
Gray Partridge/R-rare
Sandhill Crane/M
Sora Rail/SV*
Yellow Rail/SV-rare

SPECIES/STATUS

American Coot/M,SV*
Semipalmated Plover/M
Killdeer/SV*
American Golden Plover/M
Black-bellied Plover/M
Common Snipe/SV*
Spotted Sandpiper/SV*
Solitary Sandpiper/SV*
Greater Yellowlegs/M
Lesser Yellowlegs/SV*
Ruddy Turnstone/M
Willet/M,SV*
Red Knot/SM-rare
Pectoral Sandpiper/M-rare
Baird's Sandpiper/M
Least Sandpiper/M-rare
Dunlin/SM-rare
Semipalmated Sandpiper/M-rare
Western Sandpiper/M-rare
Sanderling/M-rare
Short-billed Dowitcher/M,SV?
Stilt Sandpiper/M-rare
Buff-breasted Sandpiper/M-rare
Marbled Godwit/M-rare
Wilson's Phalarope/SV*-rare
Northern Phalarope/SV*-rare
Herring Gull/M,SV-rare
California Gull/M
Ring-billed Gull/SV*
Franklin's Gull/SV,*?
Bonapartes Gull/M,SV
Forster's Tern/SV*
Common Tern/SV*
Black Tern/SV*
Rock Dove/R-rare
Mourning Dove/SV*
Great Horned Owl/R*
Snowy Owl/WV-rare
Hawk Owl/a
Great Gray Owl/R*-rare
Long-eared Owl/SV*
Short-eared Owl/SV*
Boreal Owl/R*-rare
Saw-whet Owl/R*
Common Nighthawk/SV*
Ruby-throated Hummingbird/SV*
Belted Kingfisher/SV*
Common Flicker/SV*
Pileated Woodpecker/R*
Yellow-bellied Sapsucker/SV*

SPECIES/STATUS

Hairy Woodpecker/R*
Downy Woodpecker/R*
Blk.-backed 3-Toed Woodpecker/R*-rare
Nor. 3-Toed Woodpecker/R*-rare
Eastern Kingbird/SV*
Great Crested Flycatcher/SV,*?
Eastern Phoebe/SV*
Says Phoebe/SV-rare
Yellow-bellied Flycatcher/M
Traill's Flycatcher/SV,*-rare
Least Flycatcher/SV*
Western Wood Peewee/SV*
Olive-sided Flycatcher/SV*-rare
Horned Lark/M
Tree Swallow/SV*
Bank Swallow/M
Barn Swallow/SV*
Cliff Swallow/M
Purple Martin/SV*-rare
Gray Jay/R*-rare
Blue Jay/R*
Black-billed Magpie/R*
Common Raven/WV-rare
Common Crow/SV*
Black-capped Chickadee/R*
Boreal Chickadee/R*-rare
White-breasted Nuthatch/M,SV*?
Red-breasted Nuthatch/M,SV*?
Brown Creeper/R*-rare
House Wren/SV*
Long-billed Marsh Wren/SV*
Short-billed Marsh Wren/SV-rare,*?
Gray Catbird/SV*
American Robin/SV*
Varied Thrush/M-rare
Hermit Thrush/M,SV*?
Swainson's Thrush/SV*
Gray-cheeked Thrush/M
Veery/SV*
Mountain Bluebird/SV*
Townsend's Solitaire/M-rare
Golden-crowned Kinglet/WV
Ruby-crowned Kinglet/M,SV*?
Water Pipit/M
Bohemian Waxwing/W
Cedar Waxwing/SV*
Northern Shrike/M,W-rare
Loggerhead Shrike/SV*-rare
Common Starling/R*-rare
Solitary Vireo/M,SV*-rare

SPECIES/STATUS

Red-eyed Vireo/SV*
Philadelphia Vireo/SV*
Warbling Vireo/SV*
Black-and-White Warbler/SV*
Tennessee Warbler/SV*
Orange-crowned Warbler/M,SV*?
Yellow Warbler/SV*
Black-thr. Green Warbler/M
Bay-breasted Warbler/M
Blackpoll Warbler/M
Pine Warbler/M-rare
Palm Warbler/SV*-rare
Ovenbird/SV*-rare
Northern Waterthrush/M
Connecticut Warbler/SV*
Mourning Warbler/M,SV*-rare
MacGillivray's Warbler/M-rare
Common Yellowthroat/SV*
Wilson's Warbler/M
Canada Warbler/M-rare
American Redstart/SV*
House Sparrow/R*
Western Meadowlark/SV*-rare
Yellow-headed Blackbird/SV*
Red-winged Blackbird/SV*
Northern Oriole/SV*
Rusty Blackbird/M,SV*?
Brewer's Blackbird/SV*
Common Grackle/SV*
Brown-headed Cowbird/SV*

SPECIES/STATUS

Western Tanager/SV,*?
Rose-breasted Grosbeak/SV*
Evening Grosbeak/WV
Purple Finch/SV*
Pine Grosbeak/WV
Gray-crowned Rosy Finch/WV-rare
Hoary Redpoll/WV
Common Redpoll/WV
Pine Siskin/SV*
American Goldfinch/SV*
Red Crossbill/M, WV
White-winged Crossbill/WV-rare
Savannah Sparrow/SV*
LeConte's Sparrow/SV*
Sharp-tailed Sparrow/SV-rare
Vesper Sparrow/SV*-rare
Dark-eyed Junco/SV*
Tree Sparrow/M
Chipping Sparrow/SV*
Clay-colored Sparrow/SV*
Harris' Sparrow/M-rare
White-crowned Sparrow/M
White-throated Sparrow/SV*
Fox Sparrow/M-rare/SV?
Lincoln's Sparrow/SV*-rare
Swamp Sparrow/SV*
Song Sparrow/SV*
Lapland Longspur/M-rare
Smith's Longspur/M-rare
Snow Bunting/WV-rare

HYPOTHETICAL LIST

Snowy Egret, Trumpeter Swan, Brant Goose, Greater Scaup, Virginia Rail, Piping Plover, Upland Sandpiper, White-rumped Sandpiper, Long-billed Dowitcher, Amer. Avocet, Rufous Hummingbird, Clark's Nutcracker, Mountain Chickadee, Winter Wren, Brown Thrasher, Sprague's Pipit, Blackburnian Warbler, Chestnut-sided Warbler, Bobolink, Lark Bunting, Baird's Sparrow

OVERHEARD. . .

"The earth does not belong to man, man belongs to the earth. This we know. All things are connected like the blood which unites one family. Man did not weave the web of life; he is merely a strand of it. Whatever he does to the web, he does to himself."

Submitted by Murray A. Tozer, from 1854 speech by Chief Seatle of the Duwamish League

FOURTH EDITION (1981) CHECK-LIST OF ALBERTA BIRDS

by Dr. Philip H.R. Stepney, Curator of Ornithology
Provincial Museum of Alberta
12845 - 102 Ave., Edmonton, Alberta T5N 0M6

The fourth edition (1981) of the Alberta bird check-list has been published. Three hundred and fifty-two species have been included on the list; an increase of 24 species over the third edition (1975). Of interest to bird enthusiasts is the inclusion of status and abundance codes for each species in the five natural regions: grasslands, parkland, foothills, boreal forest and Rocky Mountains. All of this information, plus a map of Alberta showing the natural regions, is reproduced in a pocket-sized foldout measuring 4x8".

The increase in the number of provincial species over previous check-lists largely reflects the inclusion of a host of accidental species. Criteria for inclusion are: presence of a specimen; adjudication of a record by the Alberta Ornithological Records Committee; a published detailed report; or two or more sightings of a species. These last two criteria are responsible for the increase in number of accidental species on the list. The 24 new species are: Yellow-billed Loon, Green Heron, Fulvous Tree Duck, Garganey Teal, Black Scoter, Eskimo Curlew, Surfbird, Sharp-tailed Sandpiper, Curlew Sandpiper, Long-tailed Jaeger, Iceland Gull, Thayer's Gull, Black-legged Kittiwake, Ancient Murrelet, Chimney Swift, Vaux's Swift, Black-chinned Hummingbird, Anna's Hummingbird, Williamson's Sapsucker, Chestnut-backed Chickadee, Pygmy Nuthatch, Eastern Bluebird, Black-throated Gray Warbler and Black-throated Sparrow.

We would like to take this opportunity to thank the people listed below who provided comments or input on early drafts of the check-list, or who helped us gather valuable records: R.E. Gehlert, T. Hammell, G.L. Holroyd, E.T. Jones, H.R. Pinel, T. Schowalter, R. Skowronski, J.B. Steeves, T.W. Thormin, E. Tull and A.N. Wiseley. The preliminary draft was based upon Alberta Birds 1961-1970 by T.S. Sadler and M.T. Myres, 1976, The Birds of Alberta, 2nd ed. by W.R. Salt and A.L. Wilk, 1966, The Birds of Alberta by W.R. Salt and J.R. Salt, 1976, and Provincial Museum records.

Persons obtaining new information on the status or abundance of species, or sightings of new or rare birds, are encouraged to submit a report to the Ornithology program of the Provincial Museum of Alberta. Their report will be placed on file and used in subsequent editions of the check-list.

Check-lists can be purchased ($1.00) from the Provincial Museum of Alberta Bookshop, 12845 - 102 Avenue, Edmonton, Alberta T5N 0M6.

PRAIRIE ENVIRONMENTAL ACTION CONFERENCE OCTOBER 16-18, 1981

by Dorothy Broadbent
R.R. #3, Ponoka, Alberta TOC 2HO

This conference arose out of a national meeting of environmental groups last June in Ottawa. It was agreed at that time to organize a series of regional meetings for the following reasons: to enable the groups to become better-acquainted; to consolidate concerns; to develop a means of selecting representatives to the 1982 conference; and to form joint positions on regional issues. With these goals in mind, representatives of all the major environmental groups from the three prairie provinces met at Camp Rayner, Saskatchewan during National Environment Week last October. It is to be hoped the large turnout was not influenced by the generosity of Environment Canada which covered most of the expenses for the three-day meeting. The following major environmental issues were discussed, and delegates from each province briefly outlined their concerns in each area.

NATIONAL PARKS

Alberta - A committee of environmental groups has been set up to work with Parks Canada and provide input into new policy-making decisions such as the twinning of the Trans-Canada Highway, the summer use of Sunshine and the expansion of existing resorts.
Saskatchewan - The Grasslands National Park and the townsite development at Prince Albert are two major concerns.
Manitoba - More national parks are needed here, Ataki is not preserved yet. The master planning for Wood Buffalo and the follow-up of Riding Mountain National Park are two areas of interest.

NUCLEAR

At present no acceptable long-term storage method exists for the tens of millions of tonnes of radioactive mill tailings generated by the nuclear industry. The tailings contaminate the atmosphere and surface water for up to a million years. The industry currently dumps these tailings into low-lying areas near the uranium mills creating a major health hazard to all life.
Alberta - The Mine Act has been revised to encourage uranium mining in the northeastern part of the province. A prototype Candu reactor has been built for use in the tar sands. A chemical fertilizer plant near Calgary refines phosphate rock which can then be used to produce yellow cake for use in the manufacture of atom bombs. A subdivision is planned near the tailings pond of this plant.
Saskatchewan - The existing mines in the northern part of the province are rapidly expanding and several new ones are under construction. Mining is taking place under lakes with subsequent contamination of the water. De-

watering is done without a license. Ore is transported to Port Hope for refining, which could result in the accidental spread of a hazardous substance. Manitoba - A research establishment is proposed for Lac du Bonnet to test the Canadian Shield as a potential storage site for underground waste. Upcoming issues are transportation and mining.

ACID RAIN

According to the report of the Subcommittee on acid rain, Still Waters, there is strong evidence to prove that acid rain poses a serious threat to all sectors of the Canadian environment including forest ecosystems, agricultural crops and man-made structures. Acid rain originates in the smokestacks of smelters, fossil-fueled power plants, oil refineries and other industries, and the exhaust from the over-used automobile. Thousands of tonnes of oxides of sulphur and nitrogen emitted daily can travel thousands of kilometers from their point of origin. Chemical reactions take place which convert them into acid-causing sulfates and nitrates. Already, in Canada, Norway, Sweden and the U.S. thousands of rivers and lakes are dead and many thousands more are threatened.

The increased acidity of soils and water causes an increase in levels of heavy metals which form a deadly combination. Mercury, for example, reacts with acid to form highly toxic methylmercury. Springtime is the most dangerous period in Canada; acid-laden snow melting into rivers and lakes can result in them becoming a hundred times more acidic in a short period of time. This is often a critical period for aquatic life such as spawning amphibians, the first to be affected by lower Ph levels. Gradually, the whole food chain becomes involved. As lakes and rivers die, so also do the birds and mammals dependent upon them for survival. Even domestic animals are suffering from the insidious side effects of acid rain; a lack of selenium in the feed is caused by increased acidity and is causing deaths from white muscle disease. Crop yields are declining in varieties susceptible to acid soils such as alfalfa. According to a study done by a U.S.-Canada Research Consultation Group, the rate of forest growth declined in southern Scandinavia and the northeastern U.S. between 1950 and 1970.

The Hon. John Roberts, Minister of Environment Canada, views acid rain as the most serious air pollution problem facing us today. The Subcommittee on Acid Rain says this: "A successful control program requires a determined political will; the lack of that political will may be the single most important impediment to combating acid rain.

Alberta - The use of coal-fired electrical generators will increase sulphur dioxide emissions from 73,000 tonnes per year in 1980 to 312,000 tonnes by 2005. Estimates for total sulphur dioxide emissions in Alberta by the year 2006 will be well over a million tonnes from three major sources, electrical generators, oil sands and natural gas processing. The Federal Report strongly recommends that Alberta adopt a policy of zero increase in acid-causing emissions over present levels up to the year 2000, and an annual decrease by a prescribed amount thereafter. Alberta's present Clean Air Act is obviously not working at the moment.

Saskatchewan - North Saskatchewan lakes do not have the buffering capacity to withstand acid rain. The pollution presently falling on Cree Lake is sourced in Alberta. Concern was expressed over the future of Saskatchewan's

sensitive lakes, especially in light of the increased emissions coming from Alberta.
Manitoba - Has no regulations, but the government has requested the companies to reduce their emissions.

WATER MANAGEMENT

Alberta - A confidential document from the Minister of Transport has revealed that feasibility studies on the social, economic and environmental effects of interbasin water transfer have already been undertaken. The tar sands and petro-chemical plants have the potential for a great amount of water consumption.
Saskatchewan - Dispersed small-scale drainage is producing ground water contamination, and there is an overcommitment of water resources in southern Saskatchewan.
Manitoba - Garrison will have a very negative impact on commercial and native fisheries. Water quality is deteriorating in all the river systems.

AGRICULTURE

Alberta - Agricultural land is being lost through increased urban and industrial developments, which are taking place primarily on prime farm land. Land is being fragmented by oil and gas roads, pipelines and powerlines. Quality is also declining because of farming practices, and irrigation is causing an increase in selinity.
Saskatchewan - Poor soil management has resulted in a 50 per cent decrease in organic matter, and a nitrogen loss. Selinity is increasing. Rangeland has been overcommitted, and consequently wildlife areas are used for livestock grazing during dry years.
Manitoba - Urban sprawl is contributing to the loss of agricultural land and natural areas. Ecological agriculture is advocated by a farm group that is recommending the use of nitrogen-fixing plants to halt the depletion of prairie soils, and is also concerned with the dangers of using even the recommended amounts of agricultural chemicals.

ENERGY

The Friends of the Earth have received a $2,000 grant to study soft energy paths for the three prairie provinces.
Alberta - This province will use more energy as it becomes more industrialized. Twenty world scale petrochemical plants are planned as well as ammonia and benzine plants. The province receives no royalties on the forty-five million cubic feet of gas still being flared off annually. Concern was expressed over the use of energy to dry coal in order to reduce its weight before shipping it to Japan. Fording coal forsees the need for 32 to 34 more coal-fired generator plants. The tar sands will need more energy, and the Athabasca River will be dammed to provide more power for Fort McMurray.
Saskatchewan - More dams are to be built on the Saskatchewan River, and coal will probably be developed as a future energy source.
Manitoba - This province is in a vulnerable energy situation.

HAZARDOUS WASTES

A panel of representatives from the Federal and three Provincial governments attended to answer questions on the problems of toxic waste disposal. Alberta is the only province seriously trying to develop a program of hazardous waste disposal. R.E.D.A. has held public hearings throughout the Province, and they are now assessing suitable areas for a disposal site. An inventory of hazardous wastes has been made up, and assurances were given that the technology exists to deal with such wastes, although no proof was given. Options on a management system have been presented to the ministers who have agreed to work within the overall plan. The final decision on the selection of a site will be made early in 1982 after careful geological and hydrological studies have been completed.

The following telegram was sent to the Federal Minister of the Environment: "Be It Resolved That: The Prairie Environmental Action Conference support the recommendations of the Federal Sub-Committee on Acid Rain".

David Brower, of Friends of the Earth, attended the conference. He spoke of the perils of America continuing on its present toxic energy path instead of trying to change to renewable benign energy. The Year 2000 Committee has been established in the United States, with goal of where America should be, environmentally, by the year 2000. Now its task is to pressure the President to follow its recommendations. (This could be an enormous undertaking judging from the button he was sporting which read, "If Reagan is the answer it must have been a very silly question"!) If the present rate of environmental degradation is not halted, great destruction will have taken place by the year 2000. Two million species, world-wide, of plants and animals, will be gone along with 40 to 60 per cent of our forests, especially the tropical ones. More deserts will be created by poor farming practices and tree-cutting. There will be two billion more people on an earth that cannot support the present four billion. Delegates to the conference thought that looking ahead to the year 2000 is a good way to bring attention to the serious condition of our earth. Many felt that they, too, should form a Year 2000 Committee so they can tell their governments where they want to be by that year. An informed public is the lever that can be used to force governments to promote the conservation of our air, our water, our land, and our resources, but it is the duty of the environmentalists to make sure the public is informed.

OVERHEARD. . .

"The Great Chief in Washington [D.C.] sends word that he wishes to buy our land. How can you buy or sell the sky, the warmth of the land? The idea is strange to us. Yet we do not own the freshness of the air or the sparkle of the water. How can you buy them from us?"

Submitted by Murray A. Tozer, from 1854 speech by Chief Seatle of the Duwamish League

PROFILES ON ORGANIZATIONS WHOSE ACTIVITIES OVERLAP THOSE OF FAN: 5

ALBERTA WILDERNESS ASSOCIATION: A BRIEF HISTORY AND PHILOSOPHY

by Grant McNabb and Richard Pharis

The Alberta Wilderness Association is a group of individuals who are concerned that there are fewer and fewer places where man can remove himself from the mechanized society in which he lives. Our civilization increasingly protects and removes us from the forces of the environment, from nature, from the feel of rain and wind. We are missing the challenge and losing the freedom of spirit that comes from confronting nature. This need for the challenge of wilderness has been described by Aldo Leopold, an early western conservationist, as resting on the idea of trophy. Whether the trophy be the top of a mountain, the head of an animal, a trout, a basket of mushrooms or berries, or the photograph of a grizzly, the pleasure that fills the need is, or should be, the pleasure of seeking as well as attaining. Areas of wilderness for recreation and re-creation must be preserved and conserved for the mental health and well-being of not only our generation, but future generations as well.

Members of the Alberta Wilderness Association have worked to influence government policy and legislation respecting the remaining wilderness areas in our province. It is a concern that much of the land, particularly the "Foothills Belt", is being abused through the administration of what is called a "multiple-use" land policy. The density of seismic exploration lines, drilling sites, access roads to these sites, coal exploration, gravel mining and logging are all responsible for a general deterioration in the recreational capacity of the land, as well as being detrimental to proper watershed management.

Four years ago the individuals who eventually formed the Wilderness Association decided that what was needed was a Wilderness Areas Act for the Province of Alberta, an Act that would legislate protection for the Ghost, Siffleur, White Goat and Willmore Wildernesses, and also allow the inclusion of new areas for wilderness protection. The initial proposal requested government consideration of a new Wilderness Area in the Elbow, Sheep and Kananaskis watershed areas. We have termed this area the "Elbow Wilderness", and it includes prime sheep range, alpine tundra and some valley bottom habitat. Watershed protection would be primary, with wilderness recreation being a compatible secondary use.

The government received this proposal, and from it, we believe, grew the draft of Bill 106, and the Public Hearings of Bill 106 in the summer of 1970. After this series of Hearings, which were all well-attended, the government

reformulated the legislation concerning wilderness, and presented the people with Bill 67, a "Wilderness Areas Act". Unfortunately, this Act is in reality an "Ecological Wilderness Reserves Act" providing a high degree of protection to plant and certain animal species in a wilderness habitat, but without protecting sufficient areas of wilderness for recreation. The maximum size allowed under Bill 67 is 144 square miles, which is, in fact, the minimum size recommended by wilderness managers in the United States and New Zealand, the two countries foremost in recognizing the social and recreational values of wilderness. Recreational use of wilderness such as trail riding, fishing and hunting are also specifically excluded, as are such innocuous consumptive uses as berry and mushroom picking. We sought, and still seek protection for wilderness recreation areas of sufficient size for man to practice the primitive arts of wilderness travel.

The Alberta Wilderness Association has indicated to the Federal Government that that government has, in essence, ignored the concept of wilderness in their Master Plan Proposals for National Parks, and has suggested possible improvements. We have told the Provincial Government that their Wilderness Act is in reality an Act for "Ecological Reserves" and have proposed direct amendments as well as an administrative classification system that would allow the continued preservation of wilderness habitat for man's use of it. We recognize the value of legislative protection of wilderness boundaries and the prohibition of access by mechanized means, but we have emphasized that a maximum size restriction is inappropriate. Rather, the boundaries of each area should be defined on the basis of what is needed to form an integral unit of wilderness habitat, each area being judged on its own merit. We have stressed that traditional recreational uses of wilderness should be managed by administrative decision upon the advice of competent natural management officers, not by legislation.

Our proposed classification system included in the Ecological Wilderness Reserve, an area deserving the highest degree of protection, selected upon the recommendation of scientists and natural resource managers. A second class of wilderness would be the Wilderness Recreational Area, an area with legislative protection for its boundaries against mechanized entry. It is here that man could practice the "primitive arts of wilderness travel" and obtain pleasure in the "seeking as well as the getting" of trophy. A third classification has also been proposed for Forest Reserve and Crown Lands whose attractiveness as wilderness is less compelling, but which contain areas that, with judicious management, could serve as de facto wilderness, the "Restricted Development Area" as proposed by the Minister of the Environment.

It is in these ways that we are attempting to assist our governments, federal and provincial, to evolve a rational system of land use as regards wilderness habitat. We will pursue these policies vigorously in the future. At the same time the Association is also embarking on a campaign of public education with regard to the social value of wilderness, and the need for proper use of it by man.

For inquiries or membership, contact the Alberta Wilderness Association, Box 6398, Postal Station "D", Calgary, Alberta. Membership is $8 per year, for which they receive the AWA Newsletter, information about Association book publications, relevant public hearing and meeting information.

NATURALISTS' BOOKSHELF

We received no book reviews in time for inclusion in this issue. However, following are some new or recent releases which may interest you:

The Cousteau Almanac of the Environment: An Inventory of Life on a Water Planet, by Captain Jacques-Yves Cousteau and staff. "An unconventional book for unconventional times, this almanac is an unprecedented compilation of the ecological issues that are affecting life on our entire planet. In a clear, readable style the authors present the most pressing environmental issues facing humankind today, the most promising solutions, and the most productive actions available to every concerned citizen." $37.50 hardback, $19.95 paper. Doubleday Canada Ltd., Toronto.

The Wading Birds of North America, by Allan Eckert and Karl Karalus. "This sumptuous book is the definitive work on the wading birds and allied marsh fowl of the North American continent." 33 color plates, 44 field sketches, 51 maps. $62.00. Doubleday Canada Ltd., Toronto. [Note: we have requested a copy of this book and hope to feature a review in the March, 1982, issue of AN].

Caribou and the barren-lands, by George Calef. "Follow the caribou through their journey of life. These majestic animals will take you on an adventure of the northern barren-lands. It is a journey through a calendar of seasons, a journey of survival - and hope." $34.95 (+$1.25 postage), by mail only, Can. Arctic Resources Committee, 46 Elgin St., Rm. 11, Ottawa K1P 9Z9.

The Park Buffalo, by Sheilagh C. Ogilvie. The story of the near-extinction of the North American buffalo herds and of the efforts made to preserve them, the book focuses on the role played by Canada's national parks. $4.95 (+ 50¢ postage). Calgary-Banff Chapter, NPPAC c/o P.O. Box 7156, Postal Stn. "E", Calgary.

Annora Brown Sketches from Life. Memoirs of this Alberta artist, noted for her paintings and sketches of the wildflowers and landscapes of southern Alberta. $14.95. Hurtig Publishers, Edmonton.

The Islands of Canada by Marian Engel and J.A. Kraulis. A coffee-table book "capturing the flavour of our lovely, history-haunted islands with stunning photographs and evocative prose". $29.50. Hurtig Publishers, Edmonton.

The Mysterious World of Dinosaurs, by Leonard Matthews. Designed to capture a child's imagination, easy-to-read text. 96 pp. $9.95. Doubleday Canada Ltd., Octopus Series, Toronto.

Animal Marvels, by Howard Smith, illus. Margot Apple. For young readers (up to 12), birds that paint, whales that sing and other astonishing creatures. $9.95. Doubleday Canada Ltd., Toronto, Ont.

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA

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OVERHEARD. . .

"It is in the wild, in what remains to us of our wilderness legacy, that we can see the purest expression of life and evoluation - of beauty, power, and wonderful complexity which are not of our making. In this wilderness we can experience the awe and rejuvenation, the challenge and joy which are reflected in our literature. We can choose to destroy this dwindled legacy, or we can appreciate it in non-destructive ways. We can respect it, or rape it. The choice we make will be sign and symbol of our relationship to life and our stature as ethical, thinking, fully human beings."

From "Marked by the Wind", Littlejon & Pearce, eds., reprinted by permission of The Canadian Publishers, McClelland & Stewart Ltd, Toronto

FAN NEWS

FAN MEMBERSHIP FEE INCREASE

Effective January 1, 1982, FAN membership fees will be: $10 Regular, $25.00 Supporting, with a 20 per cent discount for Senior Citizens. This increase has been necessitated by increased costs of just about every FAN program. It was decided that a fee increase was preferrable to a cutback in FAN activities.

ANNUAL GENERAL MEETING - CAMP CAROLINE

FAN's 1982 Annual General Meeting will be held at Camp Caroline Friday, January 29 - Sunday, February 1. Since the meeting announcement in the September AN, Camp Caroline, too, has fallen victim to inflation. New rates are: Adult, $52; Couple, $99; Senior, $47. Family rates are: Husband, $52, Wife $47, children 0-2 free, 3-7 years $32, 8-12 years, $37, 13-17, $42, 18 and up $47, with a maximum immediate family cost of $257.

The theme of this year's meeting will be "Endangered Species/Habitat". The guest speaker, Bruce Stubbs, Section Head, Land Planning, Habitat Protection and Development, Fish & Wildlife Division, will speak on "Trumpeter Swans and Habitat" Saturday evening.

Registration is Friday, January 29, 7-10 pm. The Annual General Meeting will be Saturday, 10 am. Field trips and the Director's Meeting will commence at 11 am. Sunday morning will feature early morning walks, field trips and birding with a open discussion of various issues at 9:30 am. We leave Camp Caroline by 3 pm Sunday.

Bring sleeping bags or bedding, and swimsuits for the indoor pool as well as slippers for indoors as we leave our shoes at the door. Dormitory accommodation, 6 bunks in most rooms. Limited accommodation.

We ask that you send a $10 deposit to Fred Coffey, FAN Treasurer, Box 1472, Edmonton, T5J 2N5 as soon as possible. Your reservations must be in our Treasurer's hands by no later than January 15. We look forward to seeing you there.

FAN SEPTEMBER MEETING REPORT

The Lethbridge Naturalists' Society hosted the FAN meeting on Sept. 19-20 at the Helen Schuler Coulee Centre. The latter lovely building, to be used as a nature centre for educational purposes, was built with funds provided by the two local school boards. Mary Bailey was provided with a grant to manage and plan the centre. Liz Hall has been assisting, as well. A naturalist has been appointed to the centre. So it was our privilege to enjoy the facilities of the centre.

Approximately sixty people registered, twenty involved in the Board of Directors meeting. All the Board Members were present but two, and the progress reports were dealt with. The membership secretary reported that we mail 54 complimentary copies of the AN to other organizations and government officials; 108 schools receive subscription copies; 28 other institutions subscribe; and there are 394 individual members belonging directly to FAN. The Publicity Director made an effort to encourage all the corporate club members who do not belong to FAN to become members, and mailed 750 letters inviting them to join. At the time of reporting at the meeting 31 had joined FAN. The cost of the project was $50, and it yielded $230. If all the corporate club members did join FAN, we would have 1400 members. Perhaps personal invitations by fellow members would be more effective in convincing corporate club members that a membership in FAN would not only be in their best personal interests, but in the best interests of all naturalists in Alberta.

A resolution was passed which was initiated by Mike McIvor to the government of Alberta: "Resolved that FAN commend the government of Alberta in its intention to establish ecological reserves legislation but we wish to express our reservations concerning the compatibility of mineral resources exploitation of such resources." Further discussion and resolutions concerning the effects of hydrogen sulphide gas on various aspects of the environment - health of people, plant and animal life. The Sunday morning session at Camp Caroline will be devoted to this type of resolution and if you have a concern which could or should be developed into a resolution of action, contact Dorothy Dickson or Harvey Gardner.

The evening meal was picnic style, and enjoyed in the coulee in the new picnic area which was developed by one of the Lethbridge service clubs. The evening program was an illustrated lecture on Geomorphology (land forms) by Professor C. Beaty from the University of Lethbridge.

The Library which had been purchased by Mary Bailey on behalf of the Lethbridge Naturalists Society from the $200.00 grant given by FAN for this purpose, was presented by myself and accepted by A. Roberts of the LNS and will, in turn, be donated to the Helen Schuler Coulee Centre.

We thank the Lethbridge Naturalists Society for hosting the FAN quarterly meeting and providing all those who attended with an interesting, educational weekend.

- Submitted by Mary Lore

NEW YEAR RESOLUTIONS

From time to time resolutions on various matters of concern to FAN are sent to the government. Such resolutions are usually presented to, and discussed by, your Board members only. At the FAN meeting in September it was decided that more opportunity should be given to the general membership to become involved in this process.

If you have a subject that you think should be presented as a resolution please contact one of the directors listed below. Your resolution must be backed up by as much material and as many facts as you can collect. This

takes time, but please let us know the subject of your proposed resolution immediately. We can then put you in contact with others working on the same idea or people who might be able to help provide information. We would also like to have at least the proposed subject and, if possible, the complete resolution and background for consideration of the members at the Camp Caroline meeting.

Resolutions may be addressed to the Federal or Provincial Governments or other regulatory bodies. We can present them directly from FAN or via the Canadian Nature Federation. As the next CNF conference will be in Calgary, this seems a good opportunity to express our concerns to a wider audience and would give our resolutions greater impact if they are passed by the Canada-wide Federation.

Don't worry if you have never prepared resolutions before -- we will help with the wording, method of presentation, etc., if necessary.

- Harvey Gardner, R.R. #1, Nanton, Alta. TOL 1R0 (telephone 486-5807)
- Dorothy Dickson, Calgary, Alta. (telephone 244-0191)

FAN'S POSITION: BILL 55

The following letter was sent to The Honourable Peter Trynchy, Minister of Recreation and Parks, 107 Legislature Bldg., Edmonton, Alta. T5K 2B6:

"Dear Mr. Trynchy:

At the fall Board of Directors' meeting of the Federation of Alberta Naturalists, held in Lethbridge on September 19, 1981, a resolution was passed unanimously which declared our strong support in principle for Bill 55, "The Wilderness Areas Amendment Act, 1981" which was introduced during the 1981 spring session of the Alberta Legislature. As you are aware, the Federation has been a long time and consistent advocate of ecological reserves and natural areas and we are very pleased at this attempt to broaden the spectrum of protected natural landscapes in Alberta.

The Directors of the Federation have some concerns related to the question of managing current and future dispositions within such designated reserves. However, they believe the intent of the legislation is clear and have asked me to raise this matter simply to indicate their desire that this legislation be the best possible in terms of preserving Alberta heritage. It is their hope that every effort will be made to tighten the amendments so that further surface disturbances of these designated areas will not be possible.

The Directors of FAN have also asked me to express to you and to your colleague, The Honourable Bud Miller, our strong support for your efforts to acquire the sort of land base under this Act which will provide Albertans with a system of protected lands that will be second to none.

We were pleased that the amended legislation would be more specific with respect to the composition and responsibilities of the Advisory Committee. We respectfully request that consideration be given to including a representative of the Federation of Alberta Naturalists on this Committee.

In closing, I would like to reiterate the positive support of the Federation for Bill 55 to restate our hope that this Act, perhaps tightened where necessary, will receive the approval of the entire House and will stand as a landmark in the heritage of Alberta."

Very truly yours, Mary S. Lore, President
cc: Premier Peter Lougheed, The Honourable Bud Miller, The Honourable Gordon Stromberg

FAN'S POSITION: POLLUTION STANDARDS

The following letter was sent to The Rt. Hon. Peter E. Lougheed, Premier of the Province of Alberta, 307 Legislative Bldg., Edmongon, Alberta:

Sir:

"The Federation of Alberta Naturalists resolved at our most recent Board of Directors meeting that we approach our Government and urge that the existing legislation governing POLLUTION STANDARDS in this province be enforced in all situations in order to protect all aspects of the environment as much as possible, and thus improve the quality of life for animals and humans in our wonderful province."

Sincerely, Mary S. Lore, President
cc: Hon. Jack Cookson, Min. Environment, Hon. James E. Miller, Associate Minister of Public Lands and Wildlife.

PRESIDENT'S PAGE

Environmental issues are going to be on the program at Camp Caroline, Sunday morning, January 31, 1982. If you have a genuine concern which you have researched and know the legal status of, prepare a resolution and sent it to either Dorothy Dickson or Harvey Gardner (see "New Year's Resolutions", this issue).

The Business Meeting of the Board of Directors at Lethbridge culminated in much discussion on the emissions of hydrogen sulphide into our atmosphere and what we can do about it.

Would all presidents of corporate clubs assume the responsibility of

electing two directors to the Board of Directors of FAN and be certain that either the President of FAN or the Nominating Committee are aware of their names. (Nominating Committee - Mary Bailey, Mike McIvor, Martin McNicholl).

The Trumpeter Swan Naturalists are endeavouring to reorganize in the Grande Prairie area, and it is hoped they will be successful.

I would like to thank the corporate clubs for the fine work they do in their own communities with environmental concerns. We do appreciate that a number of you are hosting a field trip for Canadian Nature Federation 1982 conference.

Please get your Camp Caroline reservations in early and I hope to see a full house there.

- Mary S. Lore

EDITOR'S PAGE

This issue, as the last, is on the slim side. However, AN readers will be pleased to know we have commitments for some exceptional material for the coming year (which, mind you, doesn't mean we're "all full up" by any stretch of the imagination). Dave and I are particularly enthused about the June issue which will be devoted to "Endangered Species/Habitat". It should make for some good reading and thought-provoking information. Reader input is, as always, welcome. If you have a special interest or knowledge of a particular problem re Alberta Endangered Species/Habitat, the June issue (deadline April 15) is your chance to speak up, to make your concerns known.

I want to remind readers/contributors that the FAN special projects deadlines are upon us. At this point, only Christmas Bird Count data should be outstanding (due January 15). We hope to publish the AN supplement on time, so please be sure your data gets to compilers and compiler data gets to the AN soon. Thanks.

OVERHEARD. . .

"When I am in the cities of man, I need human comfort, but I feel very lonely with all those people walking around. In the open beauty of the country, my own strength carries me through. I can look within myself and find all the company and comfort I need."

Submitted by Murray A. Tozer, from "Slivers of Glass" by W.A. Pedersen

NOTES AND NEWS

TRUMPETER SWAN DIORAMA

FAN members visiting Edmonton should be interested in viewing the new diorama on breeding Trumpeter Swans at the Provincial Museum and Archives. Over 200 people attended the opening on 13 October 1981, guests consisting of the "who's who" of EBC, ENH and other Edmonton area naturalists. The diorama is based on field work in the Grande Prairie area, and includes a swan that was killed when it flew into a power line, and addled eggs from swan nests in the area. This highly realistic display was created by museum artist Ludo Bogaert, a former President of EBC and frequent contributor to the AN. Ludo was assisted by another frequent FAN contributor, Terry Thormin. - M. K. McNicholl

BOTULISM LOSSES

Botulism claimed fewer waterfowl this year than it did last year, according to Harold Weaver, waterfowl biologist with the Alberta Fish & Wildlife Division. The condition occurred on just five Alberta lakes: Buffalo, Beaverhill, Whitford, Smoky and Crow Indian Lakes. The big killer in 1980 was Pakowki Lake, in southeastern Alberta, with about 9000 waterfowl succumbing. This year, said Weaver, the lake was nearly dry and therefore unattractive to waterfowl. "Last year, about 14,500 birds died from the disease. This year, the total was under 10,000," he said.

SOCIETY OF CANADIAN ORNITHOLOGISTS

A luncheon meeting of Canadian ornithologists was held at Lister Hall on the University of Alberta campus 25 August 1981 during the meeting of the American Ornithologists' Union in Edmonton. At this meeting, a new society with the above name was formed, consisting initially of those who signed the attendance sheet. The meeting was called by Dr. A. Keast of Queen's University and Dr. Henri Ouellet of the National Museum, with the immediate impetus being an invitation to the International Ornithological Congress to hold their 1986 meeting in Canada. The next meeting of the IOC is in Moscow, USSR, in August of 1982, and the congresses are 4 years apart. The new society will be a loose federation of Canadian ornithologists with a newsletter, but no journal. Several Alberta ornithologists were present, including Peter Boxall, Bill Gunn, Geoff Holroyd, Ross Lein, Martin McNicholl, Tim Myres and Phil Stepney. Ross Lein and Phil Stepney were both elected to a constitutional committee and Ross Lein was selected as the Alberta editor for the newsletter. -M.K. McNicholl

BREEDING BIRD SURVEY - 1980

Canadian results for the cooperative breeding bird survey conducted annually by the Canadian Wildlife Service and U.S. Fish & Wildlife Service

were summarized for 1980 in Can. Wild. Serv. Prog. Notes No. 122 by E. Silieff and G.H. Finney (June 1981). Thirty-one of 51 Alberta routes were surveyed in 1980. On the southern Prairies (including all three prairie provinces) statistically significant changes were documented for 15 species. Significant declines were noted for Pintail, Sora, Tree Swallow, Warbling Vireo and Yellow-headed Blackbird. Significant increases were noted for Mourning Dove, Eastern Kingbird, Horned Lark, Barn Swallow, Black-billed Magpie, Common Crow, American Robin, House Sparrow, Western Meadowlark and Common Grackle. The decline in the Sora was somewhat offset by an increase (though not statistically significant) in the central prairie provinces (including all 3 prairie provinces and 3 B.C. routes). The decline in Warbling Vireos followed a peak in 1979. Declines in 1979 of Killdeer and Common Flicker were not repeated in 1980. In the central prairies, only 3 species showed significant changes. The Pintail declines here, too, as did the Brown-headed Cowbird. Savannah Sparrows increased in the area. As the project continues, results increase in value. Interested Alberta observaers should contact the Alberta coordinator, Jack L. Park, 10236 70 St., Edmonton, Alta. T6A 2T4. - M.K. McNicholl

FEWER WATERFOWL ON THE PRAIRIES

Goose hunters in Canada in 1980 bagged a record 745,000 geese with increased harvest in the three major species, Canada, Snow and White-fronted, but statistics released by J.S. Wendt of CWS showed other species of waterfowl as declining, especially on the prairies. He said estimates of the duck harvest in Canada had been decreasing since 1976. "A common element for the past five years has been reduced kill in the major duck species in the prairie provinces," Wendt said. "In 1980, for example, the mallard harvest declined in Manitoba, Saskatchewan and Alberta, as did wigeon and pintail, while gadwall harvest declined in Manitoba and Saskatchewan. One reason for the declines has been poor habitat conditions on the prairies." Wendt said canvasbacks and redheads showed poor production last year and would probably continue to suffer due to low water levels. - Farm Light & Power, October 1981.

CONSERVATION NEWS

GRASSLANDS PARK FINALLY RATIFIED

The agreement between the governments of Canada and Saskatchewan to establish the Grasslands National Park in the Val Marie-Killdeer area of southwestern Saskatchewan has been signed. Creation of this reserve will insure that one of the last remnants of the original prairies will be protected.

LORNE SCOTT WINS GOVERNOR-GENERAL'S CONSERVATION AWARD

Saskatchewan Natural History Society President Lorne Scott was the recent winner of the Governor-General's Conservation Award. These awards are

given to Canadians who have made an outstanding contribution to our society through conservation, defined as "management of the resources of the environment so as to achieve the highest sustainable quality of human life". Lorne was also the winner this year of the Gordon Lund Memorial Conservation Trophy, awarded by the Saskatchewan Wildlife Federation for outstanding work in conservation.

SPERM WHALE BAN

In a major victory for conservationists, at this year's meeting of the International Whaling Commission, a ban of the killing of sperm whales was passed by an astonishing margin of 25 to 1, the lone holdout being Japan. A second major victory for conservationists was a ban on the so-called "cold harpoon", the non-explosive device used to kill small whales that would be blown to pieces by regular exploding harpoons. The cold harpoon is acknowledged as cruel, causing a lingering death.

ENVIRONMENTAL MONITORING SYMPOSIUM

The Alberta Society of Professional Biologists is pleased to announce a symposium entitled "Environmental Monitoring" to be held on 20 and 21 April 1982 at the Westin Hotel (formerly Edmonton Plaza) in Edmonton, Alberta.

The symposium will examine the question of why environmental monitoring is required, examine the design basis of environmental monitoring, the practical aspects of conducting environmental monitoring, the results of existing environmental monitoring programs, and the value of biomonitoring programs. Eminent speakers from universities, government and private industry will be featured.

For registration and further information contact Mr. Don Thompson, Secr., Alberta Society of Professional Biologists, Box 566, Edmonton, Alberta T5J 2K8 (telephone (403) 429-9110.

OVERHEARD. . .

"Oh ho, here's Herman, Herman the Moose. He's ornery, cantankerous, mean, unpredictable and downright dangerous - especially at close quarters. Like you know, Herman, or one of his brothers, kept me in a tree for several hours because I got too close. This is his country and his backyard and if he wants to put me in a tree for violating his privacy, that's just great. I like it that way, it makes me more honest and more careful."

Submitted by Murray A. Tozer, from "Slivers of Glass" by W.A. Pedersen

CANADIAN NATURE FEDERATION NEWS

CANADIAN CONSERVATION DIRECTORY

The Canadian Nature Federation has completed the fourth edition of the Canadian Conservation Directory. This sourcebook provides names and addresses of conservation groups, government departments and private consulting companies, among others, which are involved in environmental and conservation efforts. Copies may be purchased for $5.00 (+50¢ postage) from: Canadian Nature Federation, 75 Albert St., Suite 203, Ottawa, Ontario K1P 6G1.

LETTER FROM ERIC TULL, VP PRAIRIE PROVINCES, NWT REGION, CNF

"The Protected Areas Committee is chaired by David Fowle (who is a member of the Boards of Directors of both the CNF and the Nature Conservancy of Canada). The committee deals with questions of protection for those natural areas that are deemed to be in need of preservation. For public lands that need such protection, the onus may be on our staff or the Environmental Action Committee (as well as our affiliates and members) to persuade the appropriate government to take the necessary protective steps. But questions involving direct purchase or management of land fall into the realm of the Protected Areas Committee.

There are two direct ways in which CNF will enter into purchase and management roles. The first is as a CNF Nature Sanctuary. There is one such sanctuary, the Clifford E. Lee Sanctuary, near Edmonton, that is leased and managed by the CNF (see following report). Its establishment came about after a source of funding for purchase and management had been identified and then the groundwork for its establishment had been laid by the local naturalist and conservation groups in the Edmonton area.

The second direct management method is as a CNF Nature Observatory. One such observatory is now being established at Beaverhill Lake, again near Edmonton. In this case the land is owned by the government, and the management plan that they are developing will include designating the area as a CNF Nature Observatory. In this way, we can assure that naturalists have a say in the management of this important wildlife area.

The two examples of CNF sanctuaries and observatories have been possible only because of the lead involvement of CNF's local affiliates and members in the Edmonton area. This will undoubtedly apply to any similar projects in the future.

One national group, the Nature Conservancy of Canada, exists for the sole purpose of purchasing and preserving natural areas. The Nature Conservancy does not manage areas themselves, but instead will turn them over to a managing agency such as the government, or possibly a naturalist group, under a

binding agreement to protect the area. Because of the Nature Conservancy's expertise in this role, CNF expects to leave questions of future land purchases in their hands, and we are currently sorting out a formal working relationship with the Nature Conservancy. This relationship would see the Nature Conservancy handle the land purchase and legal questions, and the CNF through its local affiliates designating and evaluating local areas and possibly helping to manage them.

The Protected Areas Committee is thus in a position to advise on strategies for protecting natural areas and to serve as a liaison to the Nature Conservancy of Canada. If we can be of service to you in this regard please let us know.

Is the CNF spread too thin? Where should we be devoting our efforts? These questions are currently being addressed by the two members of our Priorities Committee. They are looking at how to broaden our appeal and membership, how to sharpen our focus as to which issues we tackle and which roles we play, and how to increase our efficiency in undertaking these tasks. It's a wide-ranging challenge that they have been working on for the past year. I expect to report more on this to you after our next annual general meeting and board meeting.

The 1982 annual general meeting will be held in Calgary on July 5 and 6 and will be hosted by the Calgary Field Naturalists' Society. Why not attend and see what we're all about? Details will be forthcoming in Nature Canada.

There are two important ways you could contribute to the annual meeting. Firstly, we need resolutions on important environmental issues. If you can, please prepare and send me a resolution. If you do not feel that you can draw up a resoluation, but have an issue in mind and some background material, send it to me and I will endeavour to prepare a resolution. Secondly, we need nominations for the Douglas H. Pimlott Conservation Award. It is our one conservation award and is given to an individual who has made an outstanding contribution to Canadian conservation characterized by the completion of difficult conservation tasks of national significance. We need more nominations for this award. If you know of someone who you feel is qualified, why not nominate him? If desired, I would be prepared to advise you on assembling the nomination. Information and dealines on both resolutions and the Pimlott nominations will be forthcoming in Nature Canada.

CLIFFORD E. LEE NATURE SANCTUARY REPORT

Last October, 1980, the Sanctuary held its official opening which was conducted by Mrs. Clifford Lee, with Diane Griffin (then President of CNF), Margaret Reine (Chairperson of the C.E. Lee Management Committee) and a number of visitors who are interested and connected with the establishment of the sanctuary were also in attendance.

As a result of Dr. Jim Butler's Interpretive Plan, completed during the winter, the first major phase was started. This was 3,500' of elevated boardwalk over low-lying and wet areas to complete a circular Nature Trail,

which is now in place.

Dr. Graham Griffiths' Entomological Survey Report (from last summer's work) was received in February. This has disclosed some most interesting insect findings at the northern limits of their range. A Mammal Survey has taken place this year, conducted by David Hervieux. His report is expected at the end of October.

At present, a short slide-tape programme is being prepared by Andrew Raszewski, which the committee hopes to have completed by the end of this year. This will show and explain the Sanctuary with its purpose and motives. It is hoped that this will be available to interested groups next year.

- David M. Ealey and Pat Clayton

CLUB NEWS

BUFFALO LAKE NATURALISTS

Members of the Buffalo Lake Naturalists group attended an information meeting at Stettler Oct. 1 re hazardous waste disposal. One BLN member proposal was that hazardous wastes be disposed of by the company that created them, on site, and not transported through the countryside at risk to all. BLN Environmental Committee is continuing discussions.

The BLN are holding their Christmas Bird Count and Christmas Party on December 20.

CALGARY FIELD NATURALISTS' SOCIETY

At the A.G.M. at the end of last season Jim Posey was elected President and Tim Myres Vice-President. We thank retiring Board Members Don Stiles, Art Fisher, Deirdre Spencer and Lorelei Byatt for their work and welcome the new members of the Board.

This will be a particularly busy year for CFNS as we prepare to host the CNF 1982 conference. We hope many of you have already booked the dates July 2-6!

With much reluctance we have raised our membership fees to $10. However, for this amount our members do get a quarterly magazine, monthly newsletter, monthly meetings, frequent field trips and good company!

CFNS had their first fall meeting on September 16 with guest speaker Keith Logan from Okotoks. Keith is an excellent photographer and has many fine slides and prints of subjects of nature.

CFNS is hosting the Audubon nature lectures and film series at Science Theatre 140, Univ. of Calgary, this season. Season tickets (5) are $12 for adults, $6 for Sr. & Jr. Single tickets are $3 and $1.50 respectively for individual shows. We are grateful to the Continuing Education Department of the University of Calgary for helping us by providing free facilities and advertising.

The new field guide to Calgary's Natural Areas is now available. It is much larger and more detailed than the previously-published Popular Guide. Thanks to a generous subsidy from the City Parks and Recreation Department, we are able to sell it for $10 bound, $8 unbound - considerably less than we anticipated. Our congratulations and thanks to our Natural Areas Committee, and particularly to Mike Rogers, on completion of this oft-onerous but very worthwhile task. The financial contribution made by FAN to the project was much-appreciated.

CFNS will be the hosts for the Canadian Nature Federation Conference July 5-6, 1982 at the University of Calgary. Remember to include those dates in your vacation plans to attend this conference - it may never be so close, so inexpensive or so great ever again for you - do Come! You really have not lived if you have not attended a CNF conference.

- Mary S. Lore and Dorothy Dickson (2 reports combined)

EDMONTON BIRD CLUB

A new executive was elected at the September meeting of the Edmonton Bird Club, and includes: President, David Ealey; Vice-President, Graham Chambers; Secretary, Mae Cox; Treasurer, Jack Park; Field Secretary, Bob Turner; Audubon Representative, Ron McElhaney; Program Director, Otto Hohn; Directors, Ed Telfer, Tom Webb, Peter Assman and Francis Sitwell.

The EBC has an active winter program planned. Meetings are the 3rd Friday each month and are held at 8:15 pm, Room 245, Agriculture Building, University of Alberta. Upcoming speakers are: November 20, Doug Whitfield, Bald Eagle in Saskatchewan; December 18, Don Pattie, High Arctic Birds; Jan. 16, Albert Karvonlin, EBC Banquet which is being held at the Mayfair Golf and Country Club. February to April speakers have not yet been finalized.

The club is participating actively in conservation issues including: participation in a committee to establish Beaverhill Lake as a National Nature Viewpoint; supporting the Slave River Coalition in securing more protection for the pelicans on the Slave River; and developing a water policy as a resolution to present to the Alberta Government.

LETHBRIDGE NATURALISTS' SOCIETY

Over the last 8 years the LNS has been conducting environmental educational field trips in cooperation with the Lethbridge School District No. 51. LNS recently received the following kind letter:

"Mrs. Liz Hall. . .

On behalf of the Lethbridge School District #51, I want to convey to you and the members of the Naturalists Society the appreciation of students, teachers and administration and Board for the outstanding contributions all of you have made to the educational programs of our district. Your endeavors have received great praise from teachers and students alike and have made immeasurable positive impact on the quality of our environmental programs.

Please be assured that the Board is aware of your fine work and share the sentiments of this letter.

My hope is that you and the Naturalists Society will continue the excellent work with our schools - if I can be of assistance to further facilitate your efforts, please call on me.

Yours truly, Earle J. Warnica, Director of Curriculum & Instruction"

RED DEER RIVER NATURALISTS

September 24 the RDRN celebrated its 75th Anniversary with a banquet. Dave Spalding was guest speaker. The fall outing to Medicine Lake was held September 27.

RDRN members were saddened to discover a favourite lady slipper patch had been bulldozed. The group is checking into the whys and wherefores of the incident.

Like the BLN, the RDRN were involved in the hazardous waste disposal meetings.

Ten months of negotiations between the RDRN and Union Carbide regarding the Charlie Ellis bluebird operation have drawn to a quiet successful conclusion according to the negotiating team of Michael O'Brien, Ken, Larson and Eldon Neufeld. The County of Lacombe has granted Union Carbide a development permit to build their anti-freeze plant on land which has been the summer home for 1/3 of the 200 or so nesting pairs of bluebirds and tree swallows on the Ellis farm. Construction is to begin this fall. For further details, refer to the "Bluebird Conference Report", this issue. While strongly agreeing with the concerns of farmers, the executive of RDRN decided in this instance to fight to protect the 25 years of time the Ellis' have invested in native birds, while trying to illustrate to the government that at least some big business is quite willing to pay the costs of taking environmentally-positive action.

OVERHEARD. . .

"Very Short Poem, by Raymond Souster. . .'But only God can make a tree'-
He'll never try it in Sudbury."

From "Marked by the Wind" reprinted by permission of The Canadian Publishers, McClelland and Stewart Ltd., Toronto

JUNIOR NATURALISTS' SECTION

ROCKY MOUNTAIN LION

by Randy Leavilt
Cardston, Alberta

The Rocky Mountain Lion is the largest cat in Alberta. I have always like the mountain lion and I will continue to like the beautiful animal. Because it is a very muscular animal, it can catch a deer or an elk very easily.

Most of the time the mountain lion is four to six feet long not including the tail. The tail is two to three feet long. A mountain lion averages a weight of two hundred to two hundred and fifty pounds when full grown. The mountain lion's head is rather small compared to his body.

The mountain lion, also called a cougar, puma, panther and catsmount. A mountain lion is called these names fairly often.

A mountain lion is a gray or reddish-yellowish color. This helps him to blend into its surroundings so hunters or its prey cannot see him. This helps considerably when he is stalking his prey. The throat and the underneath of the belly are white. The tip of his tail is black.

The mountain lion has long legs so he can outrun his prey. His long legs also help him leap high and cover long distances at a time.

A mountain lion has an unusual pattern of speech. When a mountain lion crys, it sounds like a woman screaming in pain. A mountain lion can also make a soft whistle when mating or trying to pick up a scent. When angry, it growls and hair along its backbone raises. They do not become angry too often, but they can easily kill a man if forced to.

When a female mountain lion has her cubs, she picks a well hidden place. These places are usually caves or holes in the ground. The den is exceptionally well hidden so that other large carnivores will not eat the cubs. Before the mother has her cubs, she picks two or three dens so that if her first one is found she can move to another cave or hole.

Every two years a female mountain lion has cubs. Because of this a cub who still needs its mother's help can be helped by the female before she has more cubs.

In April a female bears two to four cubs. These cubs are blind at birth, but by the end of one to two weeks they can see. A cub weighs approximately one pound when it is born. In ten to twelve years a cub will gain between two hundred and two hundred and fifty pounds.

A cub has fur of a lighter color than its parents. They have dark brown spots which they will grow out all over their bodies. At birth a

cub has dark brown or black rings on its tail. Most of these rings will disappear leaving only the black part of the tip of the tail. After their first year of life the cubs can become independent. They have learned everything they will need to know in order to survive independently.

AURORA BOREALIS

by Hali Forstner
Grade 3

The aurora borealis is sometimes called the northern lights. The auroras are in many forms such as colorful streamers, curtains of light, arcs, rays or patches of light. It is seen at night. The auroras occur between 35 to 600 miles above the earth. In the northern hemisphere, at a latitude of 60 degrees, the aurora borealis can be seen every clear night. Similar lights also occur in the southern hemisphere where they are called the aurora australis, or southern lights.

Regions where the aurora borealis is brightest, a faint arc of light appears in the dark northern sky after sunset. From this arc bright rays of light reach upward. Most of the time they rays are green, red, yellow, violet and blue. With parallel streamers of light, the colored rays may cover the whole northern sky. The display lasts only a short time, but it may be repeated several times during one night. Sometimes the rays come together overhead and form a corona or crown.

The best places to see the aurora borealis is in Alaska, Canada (near Hudson Bay), southern Greenland and Norway. Sometimes it is seen as far south as the United States. The most beautiful lights are 50 to 100 miles above the earth. They occur more often and they are the most brilliant when large groups of sunspots are visible on the sun.

Most astronomers think the display is caused by electric storms or the sun's radiation. Electrically charged particles are sent out from the sun at a speed of 3,000 miles per second. High speed electrons and protons trapped in the Van Allen radiation belt high above the earth are then channeled toward the polar regions by the earth's magnetic field. When these electrically charged particles meet and collide with air molecules (chiefly oxygen and nitrogen), which excites them to luminosity. Near the 600 mile level, the light may result from the combination of electrons and protons to form hydrogen atoms. As I have never seen the aurora borealis I hope in the future that I will be able to view this wonderful display.

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WOODLAND CARIBOU

by Murray Prichard, Grade 5

In this essay I will describe the Woodland Caribou and where it is from in Alberta. I will name the food it eats and what hunts it. I will name its enemies and tell why it is endangered and how it could be preserved so the animal's population will increase. There will also be an experience that I had with the animal.

The Woodland Caribou is a little bigger than a deer. It is very heavy with large strong feet and rounded-like hoofs. All males have antlers and more than half of the females have antlers too. The antlers are long and close to the top, they go flat and wide. The body colour is usually dark brown. Lighter shades occur during winter because of bleaching. Males have a white strip around the leg just above the hoof.

The Woodland Caribou is mostly found in North America. Some are in the northwest top of the mountains or in Jasper National Park. As far north that it travels is to the treeline. This is because he likes to stay in the woods.

In the summer the caribou's diet is grass and shrubby alpine vegetation. The food it eats in the winter is brush, moss and lichen.

The Woodland Caribou's worst enemy is the wolf. They follow the herds and pick off stragglers, immature and the old. However, man is still the reason for the caribou's population to decrease.

The Woodland Caribou bulls are polygamous and can mate herds of as many as thirty cows. Although fewer cows per herd is the rule. Breeding occurs in late October. Single births are normal and calves are born in June.

Woodland Caribou is not endangered but requires great help to survive. One way its population is decreasing is that rich people go up in a plane and shoot all the caribou they see. Later they go down and pick the best head out of all. The head is taken home and put on a plaque. This way twenty or thirty caribou are destroyed and left to rot. Another way that the caribou's population is decreasing is the wolf. When the wolfs population is high, a pack of about twenty will attack the strongest in the herd. Most of the time the wolves will win, but sometimes they lose. The good part about the wolves is that they mostly kill the sick and old so the herd will be strong and healthy and won't catch the disease.

The way I think the Woodland Caribou could be preserved is to put all caribou in parks where there is no hunting. Or they could be put on game farms where the animal could be raised so the population will increase. I have had an experience with the Woodland Caribou. One night I was coming home with my grandpa on a fishing trip. We were driving along the road and a Woodland Caribou ran across the road. Grandpa stopped the car and we watched it until we couldn't see it anymore. Then we drove home.

ALBERTA NATURALIST

SPECIAL ISSUE NO. 1. July, 1981.

This book is dedicated to the memory of the late Helen C. Schuler, a founding officer of the Federation of Alberta Naturalists and is published to commemorate the tenth anniversary of the Federation. It is the history, written by the members, of both this organization and its Corporate Member Clubs. Some of these member clubs have been active since the turn of the Century, others are of a more recent inception, but the whole is fascinating reading and a must for any person interested in both the human and natural history of Alberta.

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Edmonton Bird Club

FEDERATION OF ALBERTA NATURALISTS

SPECIAL ISSUE NO. 2

BIRD BANDING IN ALBERTA

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